FINAL

CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT
Slack Chemical Co., Inc.
Carthage, NY

GENERAL INFORMATION

Stationary Source	Slack Chemical Co., Inc.
Date of Inspection	October 26, 2010
USEPA Inspector	Dwayne Harrington – USEPA, REGION II (Edison, NJ)
Contract Auditor	Neil Mulvey, OHC (Subcontractor)
Description of Activities	• Opening meeting with facility representative. • Program audit. • Closing meeting with facility representatives. Program audit consisted of the following activities: 1. Document review. 2. Field verification. 3. Personnel interviews

STATIONARY SOURCE INFORMATION

EPA Facility ID #	1000 0006 3815
Date of Latest Submission (used for RMP inspection)	Receipt Date: May 18, 2009 (Re-submission) Anniversary Date: May 18, 2014
Facility Location	465 South Clinton Street Carthage, NY 13619 Jefferson County Tel. (315) 493-0430
Number of Employees	*RMP*Submit* states 55 employees (per RMP registration) Facility reported 65 employees on-site at time of inspection (including operations, office & sales) Non-Union workforce

Description of Surrounding Area	The facility is located on 15.5 acres in a residential area on the east side of Carthage, NY. Slack's Carthage operations include six buildings, two located on the south side of S. Washington Street and four buildings located on the north side of S. Washington Street. S. Washington Street is a public road with open access on either end. Residential properties are located to the north, west, and south. A cemetery and open space is located to the east. Residential properties are located less than 200-ft. from the facility entrance. The Carthage Elementary Schools is located approximately 500-ft. to the west.
Participants	Participants included representatives from: Dwayne Harrington, USEPA – Region II, Edison, NJ Neil Mulvey, USEPA Contractor Norm Barkley, Warehouse Leader – Slack Chemical + Kenny Birchenough, Chemical Engineer – Slack Chemical Stuart Field, Manager – Slack Chemical (Saratoga, NY Division) Paul Pierce, Human Resources Manager – Slack Chemical * Mike Shanahan II, Mechanical Engineer / Sales Representative – Slack Chemical Robert Sturtz, President – Slack Chemical * Lead representative for Slack Chemical (NOTE – Mr. Pierce was lead representative due to absence of Mr. Thomas Williams, Director of Regulatory Affairs who was on military assignment in Iraq) + Participated in facility tour; lead tour (hourly employee)

REGISTRATION INFORMATION

Process ID #	1000002292 – Process – storing of 1-ton chlorine cylinders
Program Level (as reported in RMP)	Program 3
Process Chemicals	Chlorine @ 24,000-lbs.
NAICS Code	42469 (Other Chemical and Allied Products Merchant Wholesalers)

GENERAL COMMENTS

Slack Chemical is a chemical warehousing, repackaging, and distribution company. At any time there could be between 250 – 300 different chemicals on site. Business is conducted out of six buildings located on site. A public road (S. Washington Street) divides the property. An office building and main warehouse are located on the south side of S. Washington Street. Operations in the main warehouse include receiving, storage, and repackaging. Four buildings are located on the north side of S. Washington Street, including a flammable liquids building (receipt, storage, and repackaging), a dry goods warehouse (cold and heated storage), a cold warehouse building, and a vehicle maintenance building.

A total of approximately 350,000 ft.^{2} of warehouse space is available on site. The site includes two rail road sidings for material distribution. Operations include:

- Warehouse / distribution – receipt, storage, and distribution of chemicals.
- Repackaging – receipt, storage, transfer to smaller containers, and distribution (i.e. receipt via rail car or tank truck and repackage to smaller containers (300-gals. totes, 55-gals. drums, 15-gals. carboys, 5-gals containers, 2.5-gals. Containers)).
- Dry Goods Mixing – blending of solid materials, packaging, and distribution.
- Liquids Blending – blending / dilution of liquid materials, packaging, and distribution.

Bulk storage tanks ranging in size from several hundred gallons to 15,000-gals. are located at the main warehouse / distribution building, the flammable liquids building, and dry goods warehouse building.

The facility functions as a three-shift operation, 24/5. Each shift consists of one warehouse supervisor. Day shift includes six workers and off-shift includes three

workers. Distribution includes 14 delivery truck drivers with approximately 100 vehicles in the delivery fleet.

Materials handled on-site include (not inclusive):

- Aqueous ammonia (30%)
- Hydrogen peroxide
- Hydrogen chloride
- Isopropyl alcohol
- Acetone
- Methyl alcohol
- Methyl ethyl ketone

The RMP-regulated process involves the receipt, storage, and distribution of chlorine cylinders (both 1-ton and 150-lbs. cylinders). There is no repackaging of chlorine on site. The cylinders are received from Jones Chemical. Average inventories are approximately 50–100, 150-lbs. cylinders and eight, 1-ton containers.

Important characteristics of chlorine include:

- Greenish-yellow gas with extremely pungent irritating odor
- Exists as a gas at room temperature with a boiling point of -29 ºF
- Considered a dense gas (weighs 2.5 times as much as air)
- Non-explosive or flammable
- IDLH is 10 PPM

The chlorine cylinders are stored in the dry goods warehouse on the north side of S. Washington Street. The 150-lbs. cylinders and 1-ton containers are stored in separate areas within the warehouse.

Slack Chemical operates another RMP-regulated facility in Saratoga Springs, New York. EPA performed a RMP inspection at that facility in May 2010.

RMP DOCUMENTATION

RMP documents are contained in the Risk Management Program (RMP) Manual (dated 6/18/10) prepared by Mr. Thomas Williams, Director of Regulatory Affairs, Slack Chemical. Various RMP procedures are separated by tabs in the Manual.

Management System [*40 CFR 68.15*] & Registration

Mr. Thomas Williams is the designated RMP responsible manager. The written management system description describes a plant Safety Committee, including

identification of the Safety Committee members, which includes hourly employees. An organization chart is included.

Facility management who participated in this RMP inspection did not demonstrate a good understanding of RMP. They did explain however that Mr. Williams was unavailable due to a recent military assignment to Iraq. Not all documents were available for review.

The maximum intended on-site inventory of chlorine per the RMP registration is 24,000-lbs. The quantity on-site at the time of the inspection was:

Seven 1-ton containers: 7 x 2,000-lbs. = 14,000-lbs.
30 150-lbs. cylinders: 30 x 150-lbs. = 4,500-lbs.
Total on-site inventory = 18,500-lbs.

Hazard Assessment [*40 CFR 68.20-68.42*]

The nearest public receptor is approximately 0.1 miles from the facility. The facility used the Chlorine Institute's Pamphlet 74, "Estimating the Area Affected by a Chlorine Release, Scenario B" to determine the Worst Case OCA. The facility used an endpoint of 5 ppm, rather than the required chlorine ERPG-2 endpoint of 3 ppm. The facility used meteorological parameters typical for the Carthage area during truck loading times, rather than the required wind speed (1.5 m/s) and stability class (F) required by RMP regulations. The facility used a single wind direction (SW), rather than a 360^{o} impact area. The facility generally estimated the potential impact area, rather than using current area census data. There was no Alternative Release OCA.

Process Safety Information (PSI) [*40 CFR 68.65*]

Process safety information available for review included:

- MSDS for chlorine
- Description of 1-ton chlorine containers
- Chlorine Institute pamphlets
- Information regarding Chlorine Institute "B kits"

While the regulated process of receiving, storing, and distributing 150-lbs. cylinders and 1-ton containers of chlorine is simple, the following PSI information was missing nonetheless:

- Block flow diagram (BFD)
- Evaluation of consequences of deviation
- Electrical area classification designations
- Ventilation system design information
- Design codes and standards employed
- Description of safety systems
- PSI information related to the 150-lbs. cylinders

There was no documentation that the equipment complies with recognized and generally accepted good engineering practices.

Process Hazard Analysis (PHA) [*40 CFR 68.67*]

While documentation included a page entitled, "Conducting Process Hazard Analysis," there was no record of a completed PHA available for review.

Standard Operating Procedures (SOPs) [*40 CFR 68.69*]

The facility has one written operating procedures specific to the process, "Transporting & Storage of Chlorine Cylinders," dated 11/2/09.

The operating procedure does not include a description of the consequences of deviation, steps required to correct or avoid deviation, or a description of safety systems and their function.

Training [*40 CFR 68.71*]

Initial employee training is typically 8 hours. Refresher training is conducted every two or three years. Documentation includes a record of hazardous materials/safety training regarding chlorine (conducted on 1/8/10) and spill response / first aid (completed on 3/19/10). Documentation includes identification of employee trained, instructor, description of training, and date of training. An evaluation questionnaire is completed by each attendee as confirmation of training received.

Mechanical Integrity [*40 CFR 68.73*]

There was no written mechanical integrity program available for review. The following inspection / test records were available for review:

- Forklift truck inspection (9/30/10)
- Fire extinguisher record
- Sprinkler gauge readings (September 2010)

The following mechanical integrity records were not available for review:

- List of equipment included in the mechanical integrity program
- Description of recognized and generally accepted good engineering practices followed for inspection and testing
- Scheduled frequency of inspections and tests
- Documentation that equipment is suitable for its process application
- Documentation that equipment is suitable for its intended use and installed properly and consistent with design specifications

- Documentation that maintenance materials, spare parts, and equipment are suitable for the intended process application

Management of Change (MOC) [*40 CFR 68.75*] & Pre-Startup Review (PSR) [*40 CFR 68.77*]

There was no written MOC or PSR procedure available for review. There is documentation of a proposed change regarding relocation of the chlorine cylinder storage area, however there is no completed MOC or PSR review for that change.

Compliance Audits [*40 CFR 68.79*]

Documentation of an "RMP Compliance Audit" dated 4/30/04 is available. However, this report does not satisfy the requirements for a RMP compliance audit. No other audit records were available for review.

Incident Investigation [*40 CFR 68.81*]

There was no written incident investigation procedure available for review. The facility does have an incident investigation form for documenting investigations. Facility management reported that there have been no chlorine releases in the past 20-years.

Employee Participation [*40 CFR 68.83*]

There was no written employee participation plan available for review.

Norm Barkley, Warehouse Leader (hourly employee), participated in the inspection.

Hot Work Permit [*40 CFR 68.85*]

There was no written hot work procedure available for review. The facility does have a hot work permit for documenting hot work review and authorization. A completed hot work permit dated 5/3/10 was available for review.

The hot work permit does not include of the fire prevention and protection requirements required in 29 CFR 1910.252(a), including:

- Ensuring a minimum of 35-ft. distance to combustible materials
- Ensuring that wall or floor openings within 35-ft. do not expose combustible materials
- Ensuring that floors are swept clean of combustible materials
- Specifying areas where hot work is prohibited (areas containing appreciable quantities of flammable liquids)
- Other requirements as noted in 29 CFR 1910.252(a)

Contractor Safety [*40 CFR 68.87*]

The facility has a written Contractor Safety Rule, dated 6/3/94, that describes Slack Chemical's expectations for contractor safety. Facility management reported that they do not employ outside contractors to work on or near the RMP regulated process so there are no contractor files to review.

Emergency Response [*40 CFR 68.90 – 68.95*]

The facility does not maintain an internal hazmat team, but coordinates with local emergency services in the event of a chlorine release.

FACILITY TOUR

Several items noted during the facility tour include:

- Aqueous ammonia (>20%) is regulated under the RMP standard if on-site inventories exceed 20,000-lbs. TQ. Calculation of on-site quantity should only include the weight of ammonia, not the weight of water. The facility utilizes a15,000-gals. bulk tank for the storage of 30% aqueous ammonia. At the time of this inspection, the tank level was 81.99%, therefore:

  15,000-gals. @ 81.99% = 12,298-gals. on-site inventory
  12,298-gals @ 7.5-lbs./gals. = 92,235-lbs. of 30% aqueous ammonia
  92,235-lbs. x .30 (30% solution) = 27,670-lbs. of ammonia

  This inventory exceeds the TQ of 20,000-lbs. **The aqueous ammonia process is therefore a RMP regulated process. Slack Chemical has not registered the aqueous ammonia process nor is it considered or managed as a RMP regulated process.**

- The inspectors observed a visible 'layer' of HCl fumes 'floating' approximately five-feet above the floor in an area of the Main Warehouse, presenting an immediate exposure hazard to workers in the building. Facility management explained that fumes were escaping from a loose lid on a nearby HCl tote. The problem was immediately corrected.

- During the tour of the Dry Goods Warehouse the inspectors observed cylinder storage areas for other RMP regulated materials, namely anhydrous ammonia (TQ = 10,000-lbs.) and sulfur dioxide (TQ = 5,000-lbs.) While on-site, inventories observed were below the TQ.

- Bulk 30% aqueous ammonia is stored immediately adjacent to an HCl tank. **The facility should evaluate the potential for these incompatible materials to mix causing a hazardous reaction.**

- Combustible and flammable materials (propane cylinders) are stored immediately adjacent to the 1-ton chlorine containers in the Dry Goods Warehouse. **The facility should improve housekeeping and storage practices to ensure that no combustible or flammable material is stored adjacent to chlorine containers, per the requirements of Pamphlet 1 - Chlorine Basics, The Chlorine Institute (Edition 7, October 2008).**

- The 30% aqueous ammonia bulk storage tank and associated piping/valves showed signs of external rusting.

- Housekeeping throughout the facility was poor.

FINDINGS/RECOMMENDATIONS

Findings:

Risk Management Plan [40 CFR 68.20-68.42]

The aqueous ammonia (>20%) inventory exceeds the RMP TQ of 20,000-lbs and is therefore a RMP regulated process. **The facility must register the aqueous ammonia process a RMP regulated process *(40 CFR 68.190-68.195; risk management plan).***

Hazard Assessment [40 CFR 68.20-68.42]

The facility must perform a hazard assessment which includes all RMP requirements ***(40 CFR 68.20-68.42; hazard assessment).***

Process Safety Information (PSI) [*40 CFR 68.65*]

- PSI did not include the following information regarding technology of the process:

  - Block flow diagram (BFD)
  - Evaluation of consequences of deviation

  The facility must develop information describing the technology of the process, including a BFD and an evaluation of the consequences of deviation *(40 CFR 68.65(c)(1)(i) and (iv); process safety information).*

- PSI did not include the following information regarding equipment in the process:

  - Electrical area classification designations
  - Ventilation system design information
  - Design codes and standards employed
  - Description of safety systems

The facility must develop information describing the equipment in the process, including electrical area classification designation, ventilation system design data, design codes and standards, and a description of safety systems *(40 CFR 68.65(d)(1)(iii), (v), (vi), and (viii); process safety information).*

- PSI did not include documentation that equipment utilized in the process complies with recognized and generally accepted good engineering practices. **The facility must evaluate and document that equipment utilized in the regulated process complies with recognized and generally accepted good engineering practices *(40 CFR 68.65(d)(2); good engineering practices).***

- There was no PSI information related to the 150-lbs. chlorine cylinders handled on-site. **The facility must compile the required PSI related to the 150-lbs. chlorine cylinders handled in the regulated process *(40 CFR 68.65; process safety information)*.**

Process Hazard Analysis (PHA) [*40 CFR 68.67*]

- There was no record of a completed PHA. **The facility must conduct a process hazard analysis of the regulated process *(40 CFR 68.67; process hazard analysis).***

Standard Operating Procedures (SOPs) [*40 CFR 68.69*]

- The operating procedure (Transporting & Storage of Chlorine Cylinders, 11/2/09) does not include a description of the consequences of deviation, steps required to correct or avoid deviation, or a description of safety systems and their function. **The facility must ensure that operating procedures include a description of the consequences of deviation, steps required to correct or avoid deviation, and a description of safety systems and their function *(CFR 68.69(a)(2) and (4); operating procedures).***

Mechanical Integrity [*40 CFR 68.73*]

- There was no written mechanical integrity program available for review. **The facility must establish and implement written procedures to maintain the on-going integrity of regulated process equipment *(40 CFR 68.73(b); mechanical integrity).***

- The following mechanical integrity records were not available for review:

  - List of equipment included in the mechanical integrity program
  - Description of recognized and generally accepted good engineering practices followed for inspection and testing
  - Scheduled frequency of inspections and tests

  The facility must develop inspection and test procedures and documentation as required by (*40 CFR 68.73(d)); mechanical integrity)*.

- The mechanical integrity program did not include the following documentation:
  - Documentation that equipment is suitable for its process application and intended use
  - Documentation of checks / inspections to assure that equipment was installed properly and consistent with design specifications
  - Documentation that maintenance materials, spare parts, and equipment are suitable for the intended process application

  The facility must develop inspection and test procedures and documentation *(40 CFR 68.73(f)); mechanical integrity)*.

- The 30% aqueous ammonia bulk storage tank and associated piping/valves showed signs of external rusting. **The facility must ensure that regulated processes are inspected and maintained (*40 CFR 68.73(d)); mechanical integrity)*.**

Management of Change (MOC) [*40 CFR 68.75*] & Pre-Startup Review (PSR) [*40 CFR 68.77*]

- There was no written MOC or PSR procedure available for review. **The facility must establish and implement a written procedure to manage changes to the process *(40 CFR 68.75; management of change).***

- **The facility must ensure that a pre-startup safety review is conducted prior to startup of significant changes *(40 CFR 68.77(b); pre-startup safety review).***

Compliance Audits [*40 CFR 68.79*]

- Documentation of an "RMP Compliance Audit" dated 4/30/04 is available. However, this report does not satisfy the requirements for a RMP compliance audit. No other audit records were available for review. **The facility must conduct an initial and triennial RMP compliance audits *(40 CFR 68.79; compliance audits).***

Employee Participation [*40 CFR 68.83*]

- There was no written employee participation plan available for review. **The facility must develop a written plan of action regarding employee participation, ensure employees participate in the conduct of the PHA and development of other PSM procedures, and ensure that employees have access to the PHA and other PSM documentation *(40 CFR 68.83; employee participation).***

Hot Work Permit [*40 CFR 68.85*]

- The hot work permit does not include of the fire prevention and protection requirements required in 29 CFR 1910.252(a), including:

- Ensuring a minimum of 35-ft. distance to combustible materials
- Ensuring that wall or floor openings within 35-ft. do not expose combustible materials
- Ensuring that floors are swept clean of combustible materials
- Specifying areas where hot work is prohibited (areas containing appreciable quantities of flammable liquids)
- Other requirements as noted in 29 CFR 1910.252(a)

The facility must revise the hot work permit or develop procedures to include the necessary fire prevention and protection requirements ***(40 CFR 68.85(b) and 29 CFR 1910.252(a); hot work permit).***

Contractors [40 CFR 68.87]

The facility stated that they do not use outside contractors. **The facility nevertheless must develop formal contractor selection and safety procedures for their chlorine process** ***(40 CFR 68.87; contractors).***

Good Engineering Practices [40 CFR 68.65]

Bulk 30% aqueous ammonia is stored immediately adjacent to an HCl tank. **The facility must evaluate the potential for incompatible materials to mix causing a hazardous reaction and store their chemicals accordingly** ***(40 CFR 68.65(d)(2); good engineering practices).***

Combustible and flammable materials (propane cylinders) are stored immediately adjacent to the 1-ton chlorine containers in the Dry Goods Warehouse. **The facility must improve housekeeping and storage practices to ensure that no combustible or flammable material is stored adjacent to chlorine containers consistent with industry codes and standards** ***(40 CFR 68.65(d)(2); good engineering practices).***

Housekeeping throughout the facility was poor. **The facility must ensure that housekeeping is consistent with industry codes and standards** ***(40 CFR 68.65(d)(2); good engineering practices).***